

Notice of Allowability

Application No.

09/697,025

Examiner

Gordon J. Stock

Applicant(s)

NIKOONAHAD ET AL.

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2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 6/13/05.
2. ☒ The allowed claim(s) is/are 1-2, 4-12, 14-17, 19-33, 35-60, 62, 63 and 144-175.
3. ☒ The drawings filed on 13 June 2005 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 20050526
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Election/Restrictions

1. This application is in condition for allowance except for the presence of **claims 64-143** to Group II non-elected without traverse. Accordingly, **claims 64-143** been cancelled.

Information Disclosure Statement

2. Information Disclosure Statement filed May 26, 2005 has been entered and considered by the Examiner.

Allowable Subject Matter

3. **Claims 1-2, 4-12, 14-17, 19-33, 35-60, 62, 63 and 144-175** are allowed.

The following is an examiner's statement of reasons for allowance:

As to **claim 1**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an imaging method for detecting misalignment "providing radiation to illuminate the two periodic structures along directions that are substantially normal or near normal" with the particular collecting radiation step, in combination with the rest of the limitations of **claims 1, 2, 4-12**.

As to **claim 14**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in a method for detecting misalignment of two structures placed next to each other "causing relative motion between the apertures and detectors on one hand and the two structures on the other," in combination with the rest of the limitations of **claims 14-15**.

As to **claim 16**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an imaging apparatus for detecting misalignment "a source providing a beam of radiation illuminating the two periodic structures along directions that are substantially normal or near normal to

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the reference plane” with the particular collecting optics in combination with the rest of the limitations of **claims 16-17, 19-33**.

As to **claim 35**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an apparatus for detecting misalignment of two structures two apertures and an instrument causing relative motion between the apertures and detectors in combination with the rest of the limitations of **claims 35-36**.

As to **claim 37**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an imaging apparatus for detecting misalignment of two structures on two different planes placed next to each other with respect to a reference plane the particular collecting optics in combination with the rest of the limitations of **claims 37-44**.

As to **claim 45**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an imaging method for detecting misalignment of two structures on two different planes and placed next to each other with respect to a reference plane using optics to collect radiation that are at different distances from the two structures with a particular numerical aperture in combination with the rest of the limitations of **claims 45-47**.

As to **claim 48**, the prior art of record, taken alone or in combination, fails to disclose or render obvious one or more detectors having an integration time less than 10 milliseconds and optics collecting radiation from the two structures and directing the collected radiation to form images of at least portions of the two structures on the one or more detectors which provide outputs, wherein the image of the portion(s) of one of the two structures is substantially distinct from the image of the portion(s) of the remaining one of the two structures, in combination with the rest of the limitations of **claim 48**.

As to **claim 49**, the prior art of record, taken alone or in combination, fails to disclose or render obvious a source providing pulses of radiation illuminating the two structures, wherein at least one of the pulses has a pulse width less than 10 milliseconds and optics collecting radiation from the two structures and directing the collected radiation to form images of at least portions of the two structures on the one or more detectors which provide outputs, wherein the image of the portion(s) of one of the two structures is substantially distinct from the image of the portion(s) of the remaining one of the two structures, in combination with the rest of the limitations of **claim 49**.

As to **claim 50**, the prior art of record, taken alone or in combination, fails to disclose or render obvious a source providing pulses of radiation illuminating the two structures, wherein at least one of the pulses has a pulse width less than 10 milliseconds and said source comprising a mechanical shutter with aperture time of less than 10 milliseconds, in combination with the rest of the limitations of **claim 50**.

As to **claim 51**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an integrated processing and imaging apparatus the particular collecting optics in combination with the rest of the limitations of **claims 51-60, 62, and 63**.

As to **claim 144**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an imaging method the particular imaging radiation and determining a misalignment steps in combination with the rest of the limitations of **claims 144-155**.

As to **claim 156**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an imaging apparatus for detecting misalignment the particular imaging optics and particular processor in combination with the rest of the limitations of **claims 156-173**.

As to **claim 174**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an imaging method for detecting misalignment of two periodic structures placed next to each

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other the particular imaging and determining steps in combination with the rest of the limitations of **claim 174**.

As to **claim 175**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an imaging apparatus for detecting misalignment the particular imaging optics and particular processor in combination with the rest of the limitations of **claim 175**.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

Applicant's arguments, see Remarks, filed June 13, 2005, with respect to the rejection of the claims under 35 U.S.C. 103(a) and 35 U.S.C second paragraph, have been fully considered and are persuasive. In view of the arguments and the amendment of the claims the rejection under 35 U.S.C. 103(a) and 35 U.S.C. second paragraph of claims 48-50 have been withdrawn.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

U.S. Patent 5,495,336 to Nose et al. (cited in search report of PCT/US01/51287)

Fax/Telephone Numbers

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

- 1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet;
- and
- 2) Should be unsigned by the attorney or agent.

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This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: (571) 273-8300

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (571) 272-2431.

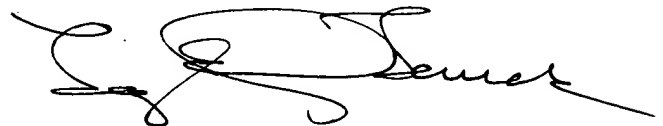
The examiner can normally be reached on Monday-Friday, 10:00 a.m. - 6:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr., can be reached at 571-272-2800 ext 77.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private Pair system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



gs
August 20, 2005



Layla Lauchman
Primary Examiner
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